

Technical Communication

The list of type specimens of Crassulaceae from East and South Africa and Madagascar in the Herbarium of the Komarov Botanical Institute (LE)

V.V. Byalt

The Herbarium of Higher Plants, Komarov Botanical Institute,
Prof. Popov street 2, St. Petersburg, Russia, 197376

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A list of the type specimens of specific and infraspecific taxa of African and Madagascar Crassulaceae preserved in the herbarium of the Komarov Botanical Institute of the Russian Academy of Sciences (LE) in St. Petersburg is given.

Keywords: Crassulaceae, taxa, types.

The following is a list of type specimens of specific and infraspecific taxa published up to 1996 and preserved in the herbarium of the Komarov Botanical Institute of RAS (LE) in St. Petersburg. This list is part of my unpublished Catalogue of type specimens of Crassulaceae in the Herbarium of the Komarov Botanical Institute (LE) and includes only taxa described from East and southern Africa, and Madagascar.

The herbarium of the Komarov Botanical Institute is the biggest and oldest in Russia and contains nearly 6 million specimens from all over the world. It houses many collections from Africa and Madagascar of such collectors as Balfour, Baumann, Bernier, Breutel, Burchell, Drège, Ecklon et Zeyher, J.C. Fischer, Eschscholtz, Mann, Marlot, Schimper, Seidlitz, Volkens, Welwitsch etc. (Lipsky 1908). This fact is not well known amongst students of the flora of Africa. For example, only a few Crassulaceae type specimens preserved in LE were cited in the most recent volumes of *Flora of Southern Africa* (Tölken 1985) and *Flora of tropical East Africa* (Wickens 1987), and thus it seemed important to publish this list.

The type specimens preserved at LE are listed in alphabetical order according to basionym. For each taxon in the list the following data are enumerated: (a) the scientific name, (b) the original place of publication, (c) categories of types (and number of sheets), and (d) a collector and number of sheet or full transcription of the original label of authentic specimens. Modern scientific names and synonyms are not given.

Adromischus tricolor C.A. Sm. 1939, Bothalia 3: 632. *Cotyledon cucullata* Schönl. in herb. EE, MS.

Isotype (1 sheet): Schlechter, No. 9933.

Aeonium leucoblepharum Webb ex A. Rich. 1848, Tent. Fl. Abyss. 1: 314. *Sempervivum chrysanthum* Hochst. ex Britt. 1871, Fl. Trop. Afr. 2: 400. *S. chrysanthum* Hochst. ex Britt. var. *glabrum* Chiov. 1919, Nuov. Giorn. Bot. Ital., n.s., 28: 154.

Isolectotype (1 sheet, selected by Ho-Yih Liu 1-VII-1986): Schimper, No. 838, sub *Sempervivum chrysanthum* Hochst.

Bulliarda brevifolia Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr. 290.

Isotypes (1 sheet): 1852 *Bulliarda brevifolia*. Ek. (one label with writings: Herb. Fischer).

Note: it is also isotype for *Crassula brachyphylla* Adamson (see below).

B. dregei Harv. 1862, Fl. Cap. 2: 330.

Isotype (1 sheet): *Bulliarda dregei* Harv. (*Crassula prostrata* Th.) Zw. Omsamwubo & Omsamcaba, Grafilder 1000–2000' Febr. (V. b) Cap. b. sped. Hb. Seidlitz, Drégé.

B. elatinoides Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 290.

Isotype (2 sheets). 1849 *Bulliarda elatinoides*. Ek. (one sheet with writings: Herb. Fischer).

B. filiformis Eckl. & Zeyh. 1837, loc. cit.: 290.

Isotype (1 sheet): 1850 *Bulliarda filiformis*. Ek. Caput bonae spei, Ecklon (label b. 1850 *Bulliarda filiformis*. Ek. Afr. austral. Herb. Ledebour and c: 1850 *Bulliarda filiformis*. Ek. Herb. Fischer). Note: also it is Isotype for *Tillaea ecklonis* Walp. (see below).

B. trichotoma Eckl. & Zeyh. 1837, loc. cit.: 290.

Isotype (1 sheet): 1851 *Bulliarda trichotoma*. Ek. Caput bonae spei, Ecklon (label b: with writings Herb. Fischer).

B. vaillantii (Willd.) DC. var. *B. subulata* Harv. 1862, Fl. Cap. 2: 330.

Isotype (1 sheet): Caput bonae spei, Zeyher, 634a.

Combesia abyssinica A.Rich. 1848, Tent. Fl. Abyss. 1: 307, based on the same type as *Crassula pharnaceoides* Fisch. & C.A. Mey.

Tillaea pharnaceoides Hochst., in pl. Schimp. Abyss., sect. I, 104. *Diosporocarpa pharnaceoides*. C.A. Meyer, loc. cit. [C.A. Meyer, Ind. Sem., VIII Hort. Petrop., 56] .. Crescit in locis humidis, margine stagnorum prope Menssah, et in provincia Chiré, mense Septembre florens et fructifera (Quartin Dillon), et prope Adoua (Schimper). Syntype [the same as the type of *Crassula pharnaceoides* Fisch. & C.A. Meyer. (see below)].

Cotyledon cucullata Schönl. in Herb. LE, MS.

Note: it is not validly published, see *Adromischus tricolor* C.A. Sm.

C. gracilis Harv. 1862, Fl. Cap. 2: 373.

Isotype (Type-fragm.) (1 sheet): 2564, *Cotyledon gracilis* Harv. Caput bonae spei. Zeyher. Note: only parts of stalks, also it is type-fragment for *C. pseudogracilis* V. Poelln.

C. meyeri Harv. 1862, loc. cit. 2: 372.

Isotype (1 sheet): *Cotyledon meyeri* Harv. (! *C. cuneata* Th.) Cap. b. spei. Herb. Seidlitz, Drégé.

C. pseudogracilis V. Poelln. 1936, Jahrb. Deutsch. Kakteen.-Ges. 1: 94.

cf. Tölken H.R. (1985, p. 17) the type is the same as for *Cotyledon gracilis* Harv. non Haw. (q.v.).

C. racemosa E.Mey. ex Harv. 1862, Fl. Cap. 2: 375.

Isolectotypes (2 sheets): *Cotyledon racemosa* EM a, Drege 1839 and *Cotyledon racemosa* EM. a, Cap. b. spei, Hb. Seidlitz, Drégé.

C. teretifolia Thunb. var. *subulstra* Harv. 1862, loc. cit. 2: 373.

Isotype (1 sheet): *Cotyledon teretifolia* Th. var. *subglabra*, Caput bonae spei. Zeyher, no. 2562.

Crassula abyssinica A. Rich. 1848, Tent. Fl. Abyss. 1: 309. *Rochea vaginata* Hochst. nom. nud. *R. dichotoma* Hochst. nom. nud.

Syntypes (3 sheets): *Rochea vaginata* Hochst. In montibus prope Dochli provinciae Sana. U.i. 1844 d. 10. Aug. 1841. Schimper iter Abyssinicum. Sectio tertia, *Rochea dichotoma* Hochst. Ad rupes in superiori et media regione montis Scholoda. U.i. 1842, Octobr. 1837. Schimper iter Abyssinicum. Sectio secunda, and *Crassula abyssinica*, Abyssiniae Mm. Quartin-Dillon et Petit. Herb. Mus. Paris.

C. acutifolia Lam. var. *B. radicans* Harv. 1862, Fl. Cap. 2: 340.

Isosyntypes (1 sheet): 6907. *Crassula acutifolia* Lam. C. b. spei. Drégé. Hb. Seidlitz and 2531. *Crassula acutifolia* Lamk. *B. radicans*. Caput bonae spei, Zeyher (on one sheet).

C. albiflora Sims var. *minor* Schönl. 1929, Trans. Roy. Soc. South Africa 17: 219. *C. microsquamata* Schönl. MS.

Isotype (1 sheet): Schlechter, no. 9849, sub *Crassula microsquamata* Schönland n. sp.

C. anomala Schönl. Bak. f. 1898, J. Bot. 36: 370.

Isotype (1 sheet): Schlechter, No. 9317.

C. aphylla Schönl. Bak. f. 1898, loc. cit. 36: 371.

Isotype (1 sheet): Schlechter, No. 8665.

C. bergioides Harv. 1862, Fl. Cap. 2: 352.

Possible isotype (1 sheet): 2515 (or 2576?) *Crassula bergioides* Harv.? Caput bonae spei, Zeyher.

C. brachyphylla Adamson 1942, J. S. African Bot. 8: 276.

Note: the type is the same as for *Bulliarda brevifolia* Eckl. & Zeyh. (See *Bulliarda brevifolia*).

C. brevifolia Harv. 1862, Fl. Cap. 2: 339.

Isotype (1 sheet): 661, *Crassula brevifolia* Harv. Caput bonae spei. Zeyher. Note: it is also Isotype for *C. Pearsonii* Schönl. (See *C. pearsonii*).

C. capillacea E. Mey. ex Drégé 1843, Zwei Pfl. Doc. 113, nom. nud.

Crassula capillacea EM. α . Cap. b. sp. Drégé, 1839, Hb. Seidlitz (2 sheets). Note: it is not validly published [this is typical *C. filiformis* (Eckl. & Zeyh.) Dietr.].

C. ciliata L. var. β *acutifolia* E. Mey. ex Drégé 1843, Zwei Pfl. Doc.: 113, nom. nud.

Note: it is not validly published.

C. clavifolia E. Mey. ex Harv. 1862, Fl. Cap. 2: 360.

Isotype (2 sheet): *Globulea clavifolia*, E.M. b Drégé, 1839 and (a) *Globulea clavifolia*, E.M. Cap. b. sp. Drégé; (b) cap. b. sp. Herb. Seidlitz. Drégé; (c) Herb. Fischer.

C. columnaris Thunb. var. *elongata* E.Mey. ex Drégé 1843, Zwei Pfl. Doc.: 175, nom. nud.

Note: it is not validly published. One sheet from herb. Drégé with this name was found in LE. It is typical *Crassula columnaris* Thunb. ssp. *prolifera* Friedr.

C. cooperi Regel 1874, Gartenflora 23: 36, tab. 786. *Sedum regelii* Kuntze 1898, Rev. Gen. Pl. 3, 2: 85, pro nom. nov.

Holotype and isotype (2 sheets): Ex horto bot. Petropolitano. 73. 11. *Crassula cooperi* Rgl. h. Haage et Schm. Teste: Regel (Det. by Tölken H.R. as type, 1973).

C. crenatifolia Bak. f. 1906, Bull. Herb. Boissier., Ser. 2, 6: 712.

Isotype (1 sheet): R. Schlechter, No. 6925.

C. dasyphylla Harv. 1862, Fl. Cap. 2: 356.

Syntype (1 sheet): *Crassula dasyphylla* Harv. 6885, Cap. b. sp. Drégé. Hb. Seidlitz.

C. diaphana E. Mey. ex Harv. 1862, loc. cit. 2: 355.

Isotype (1 sheet): *Crassula diaphana* E.M. b. Cap. b. sp. Drégé. Herb. Seidlitz.

C. dregeana Harv. 1862, loc. cit. 2: 346.

Isotype (1 sheet): *Crassula (squamulosa* W.) Dregeana Harv. Zw. Omsamoulo & Omcomas, in einem kleinem Fluss in einem Felsthal, unter 500. Apr. (v, c) C. b. spei, Drégé. Hb. Seidlitz.

C. flabellifolia Harv. 1862, loc. cit. 2: 357.

Isotype (2 sheet): 1856 *Petrogeton Umbella*, Ek. Caput bonae spei. Ecklon.

C. interrupta E. Mey. ex Harv. 1862, loc. cit. 2: 361.

Isotype (1 sheet): *Crassula interrupta* E.M. Drégé, 1839.

C. lambertiana Schönl. 1898, J. Bot. 36: 371.

Isotype (1 sheet): R. Schlechter, No. 8539.

C. lanuginosa Harv. 1862, Fl. Cap. 2: 347.

Isotype (1 sheet): 6901 *Crassula lanuginosa* Harv. C. b. spei. Drégé. Hb. Seidlitz.

C. lasiantha E. Mey. ex Harv. 1862, loc. cit. 2: 344.

Isotype (3 sheets): *Crassula lasiantha* E.M. Cap. b. sp. Drégé, 1839.

C. lycopodioides Lam. var. *obtusifolia* Harv. 1862, loc. cit. 2: 351.

Isosyntypes (on 1 sheet): *Crassula lycopodioides* Lmk. v. *obtusifolia*. 640 & 643, Caput bone spei. Zeyher and *Crassula lycopodioides* Cap. b. sp., Drégé. Note: see also *Tetraphyle littoralis* Eckl. & Zeyh. and *T. Propinqua* Eckl. & Zeyh.

C. mannii Hook. f. 1864, J. Proc. Linn. Soc., Bot. 7: 192.

Isosyntype (1 sheet). *Crassula mannii* H.f. No. 2036. West Trop. Africa 1859–63. Coll. G. Mann. Note: cf. G.E. Wickens (1987, p. 15) K, syntypes (Mann, nos. 1304 & 2036).

C. maritime Schönl. 1897, Bull. Herb. Boissier, Ser. 1, 5: 862.

Syntype (1 sheet): R. Schlechter, No. 9469.

C. microsquamata Schönl. in herb., MS.

Note: it is not validly published, see *Crassula albiflora* Sims var. *minor* Schönl.

C. multiceps Harv. 1862, Fl. Cap. 2: 359.

Isotype (1 sheet). 660 *Crassula multiceps* Harv. Caput bonae spei. Zeyher.

C. pearsonii Schönl. 1912, Ann. S. Afr. Mus. 9: 47.

Note: type is the same as for *Crassula brevifolia* Harv. (see upper).

C. peploides Harv. 1862, Fl. Cap. 2: 355.

Isotype (1 sheet): 6880. *Crassula peploides* Harv. C. b. spei. Drégé. Hb. Seidlitz.

C. petrogeton Endl. ex Walp. 1843, Repert. 2: 252.

Note: the type is the same as for *Petrogeton typicum* Eckl. & Zeyh. (see below).

C. pharnaceoides Fisch. & C.A. Mey. 1841, Index Sem. (St. Petrsb.) 8: 56.

Holotype and isotypes (3 sheets): 104 *Tillaea pharnaceoides* Hochst., Schimper iter Abyssinicum. Sectio Prima. Exs. No. 104. Ad ripas umbrosas humidus rivulorum prope Adoam. U. i. 1840 d. 18 Sept. 1837. Herb. Fischer (with the pencil drawings of flower).

C. platyphylla Harv. 1862, Fl. Cap. 2: 363.

Isotype (1 sheet): 6896 *Crassula platyphylla* Harv. C. b. spei. Drégé. Hb. Seidlitz.

C. rubricaulis Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 296. Isotypes (2 sheets): 1892. *Crassula rubricaulis* Ek. Afr. austr. Ecklon, (Caput bonae spei), Ecklon, 1835.

C. sarcolipes Harv. 1862, Fl. Cap. 2: 355. Syntype (1 sheet): 1853 *Sarcolipes pubescens* Ek. Afr. austr. Ecklon, 1835.

C. saxifraga Harv. 1862, loc. cit. 2: 357. Syntype (1 sheet): Septas 918 a. Cap. b. sp. Drégé.

C. schimperi Fisch. & C.A. Mey. 1841, Index Sem. (St. Petersb.) 8: 14, 56.

Holotype and isotypes (3 sheets): *Crassula schimperi* F.M. Abyssinia. Schimper. Cult. in h.b. Petropol., 1840. Hb. Meyer and Ex horto bot. Petropolitano. *Crassula schimperi*, H. Petrop. Semina ex Abyssinia, 1841 (2 sheets).

C. schmidtii Regel 1886, Trudy Imp. S. Peterburgsk. Bot. Sada 9: 802 et Gartenfl. 35: 345, tab. 1225.

Holotype (1 sheet): Ex horto bot. Petropolitano, teste Rgl. no. 85.10/29.

C. sphaeritis Harv. 1862, Fl. Cap. 2: 359. Note: the type is the same as for *Sphaeritis typica* Eckl. & Zeyh. (see below).

C. stachygera Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 297. Isotypes (2 sheets): 1897. *Crassula stachygera* Ek. Afr. austr. Ecklon, 836 and 1897. *Crassula stachygera* Ek. Caput bonae spei. Ecklon, [Herb. Fischer].

C. stachygera Eckl. & Zeyh. var. γ *pulchella* Harv. 1862, Fl. Cap. 2: 344.

Syntype (?) (1 sheet): (a) 6888 *Crassula*, C. b. spei, Drégé and (b) 6888 *Crassula stachygera*, E. & Z. var. γ *pulchella*. Flora Capensis vol. II.

C. striata Schönl. in Herb. LE., MS.? Plantae Schlechterianae Austro-Africanae. Iter secundum. No. 9793. *Crassula striata* Schönland n. sp. Terra capensis, Regio occidentalis: Zwartberg, 1500 20. XII. 1896. Note: in LE is preserved one sheet with this label, but I have not found where this species was published.

C. sylvatica Licht. ex Schultes 1820, Syst. Veg. 6: 726. Lectotype (selected here, 1 sheet): *Crassula sylvatica* (Licht.) nov. sp. In Duivelsbosch prope Zwelendani. Herb. Schrader. Note: The holotype is not found in B, and in the opinion of R.H. Tölken (1985) it was destroyed. The specimen, which, in my opinion, has a label written by Lichtenstein himself, exactly agrees with that of the description.

C. turrita Thunb. var. β *latifolia* Harv. 1862, Fl. Cap. 2: 357. Syntype (1 sheet): 2546 *Crassula turrita* Thunb. β *latifolia*. Caput bonae spei, Zeyher.

C. virgata E. Mey. ex Drégé 1843, Zwei Pfl. Doc.: 100, nom. nud. Note: in LE was found one sheet with label: *Crassula virgata* E.M., Drege, 1839; it is not validly published. This is typical *C. flava* L.

Disporocarpa pharnaceoides C.A. Mey. ex Rich. 1848, Tent. Fl. Abyss. I: 307, nom. nud., pro syn. Note: see *Combesia abyssinica* A. Rich.

D. pharnaceoides (Fisch. & C.A. Mey.) Schweinf. & Aschers. in Schweinf. 1867, Beitr. Fl. Aeth.: 271, comb. inval., gent non rite publ. Note: see *Crassula pharnaceoides* Fisch. & C.A. Mey.

Globulea clavifolia E.Mey. ex Harv. 1862, Fl. Cap. 2: 360, nom. nud., pro syn. Note: it is not validly published, see *Crassula clavifolia* Harv.

Grammanthes flava E.Mey. ex Drégé 1843, Zwei Pfl. Doc.: 76, 110, nom. nud. *Grammanthes flava* EM. α Drege, 1839. Note: it is not validly published.

G. gentianoides (Lam.) DC. var. δ *media* Harv. 1862, Fl. Cap. 2: 331. Isolectotype (1 sheet): 2512 [Zeyher]. Note: cf. Tölken R.H. (1985) the type is Zeyher, 2512.

G. sebaeoides Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 303. Isotypes (2 sheets): 1936, *Grammanthes sebaeoides* EK. Herb. Fischer and 1936. *Grammanthes sebaeoides* Ek. Afr. austr. (Caput bonae spei) Ecklon, 1835.

Helophytum filiforme Eckl. & Zeyh. 1862, loc. cit.: 289. Isotype (1 sheet): (a) 1844 *Helophytum filiforme* Ek. Caput bonae spei. Ecklon (b) 1844 *Helophytum filiforme* Ek. Herb. Fischer.

H. fluitans Eckl. & Zeyh. 1862, loc. cit.: 289. Isotype (2 sheets). 1845 *Helophytum fluitans* Ek. Caput bonae spei. Ecklon and 1845 *Helophytum fluitans* Ek. Herb. Fischer.

H. inane (Thunb.) Eckl. & Zeyh. var. *latifolium* Eckl. & Zeyh. 1862, loc. cit. 2: 289. Isotype (1 sheet): (a) 1847 *Helophytum inane* Ek. β *latifolium* Ek. Caput bonae spei. Ecklon; (b) 1847 *Helophytum inane* Ek. β *latifolium* Ek. Herb. Fischer.

Kalanchoe glandulosa Hochst. ex A. Rich. 1848, Tent. Fl. Abyss. I: 312. Isosyntypes (3 sheets): Schimper, No. 904, sub *Calanchoë glandulosa* Hochst.

K. hildebrandtii Baill. 1885, Bull. Mens. Soc. Linn. Paris I, 59: 468. Isotype (1 sheet). No. 3684. Flora von Central Madagascar. Statio Ost-Imerina: Andrangoloaca. Nov. 1880, Leg. J.M. Hillebrandt, comm. C. Rensch. Note: cf. Raymond Hamet (1907), the type of this species is specimen no. 3684 (not no. 3664).

K. luebbertiana Engl. 1907, Bot. Jahrb. Syst. 39: 463. Isotype (1 sheet): Dr. Luebbert, No. 67.

K. multiceps Baill. 1885, Bull. Mens. Soc. Linn. Paris I, 59: 469. Isotype (1 sheet): J.M. Hildebrandt, No. 3576.

Kitchingia peltata Baker 1882, J. Linn. Soc. Bot. 20: 141. Isotype (1 sheet): J.M. Hildebrandt, No. 3702.

Petrogeton nivale Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 292. Isotypes (2 sheets): 1860 *Petrogeton nivale* Ek. Caput bonae spei. Ecklon and 1860 *Petrogeton nivale* Ek. Herb. Fischer.

P. typicum Eckl. & Zeyh. 1837, loc. cit.: 291. *Crassula petrogeton* Endl. ex Walp. 1843, Repert. 2 252, pro nom. nov. Isotypes (2 sheets): 1854 *Petrogeton typicum* Ek. Afr. austr. Ecklon, 835 and 1854 *Petrogeton typicum* Ek. Herb. Fischer (with isotype of *P. typicum* Eckl. & Zeyh. var. *minus* Eckl. & Zeyh. on one sheet). Note: It is also isotype for *Crassula petrogeton* Endl. ex Endl.

P. typicum Eckl. & Zeyh. var. *minus* Eckl. & Zeyh. 1837, loc. cit.: 291.

Isotypes (2 sheets): 1854. *P. typicum*. Ek. β minus Ek. Afr. austr. Ecklon, 835 and 1854. *P. typicum*. Ek. β minus Ek. Herb. Fischer (with isotype of *P. typicum* Eckl. & Zeyh. on one sheet).

Purgosea sediflora Eckl. & Zeyh. 1837, loc. cit.: 298 (sub *Pyrgosea*).

Isotypes (3 sheets): 1909. *Pyrgosea sediflora*. Ek. Afr. austr. Ecklon, 835 and 1909. *Pyrgosea sediflora*. Ek. Herb. Fischer.

Rochea dichotoma Hochst. ex A. Rich. 1848, Tent. Fl. Abyss.: 309, nom. nud., pro syn.

Note: it is not validly published, see *Crassula abyssinica* A. Rich.

R. microphylla E. Mey. ex Dréché 1843, Zwei Pfl. Doc. 80, nom. nud.

Note: it is not validly published, one specimen with label: *Rochea microphylla* E.M. C. b. spei, Dréché. Hb. Seidlitz is kept in LE. It is typical *Crassula obtusa* Haw.

R. vaginata Hochst. ex A. Rich. 1848, Tent. Fl. Abyss. 1: 309, nom. nud., pro syn.

Note: it is not validly published, see *Crassula abyssinica* A. Rich.

Sarcolipes pubescens Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 290. *Crassula sarcolipes* Harv. 1862, Fl. Cap. 2: 355.

Isotypes (2 sheets): 1853 *Sarcolipes pubescens*. Ek. Afr. austr. Ecklon, 1835. Note: It is also isosyntype for *Crassula sarcolipes* Harv. (see upper).

Sedum epidendrum Hochst. ex A. Rich. 1848, Tent. Fl. Abyss. 1: 314.

Isotypes (2 sheets): Schimper, Exs. No. 1291.

S. regelli Kuntze 1898, Rev. Gen. Pl. 3, 2: 85, pro nom. nov. Note: the type is the same as for *Crassula cooperi* Regel (see upper).

Sempervivum abyssinicum Hochst. ex A. Rich. 1848; Tent. Fl. Abyss. 1: 315.

Isosyntypus (2 sheets): Schimper, Na. 138.

S. chrysanthum Hochst. ex Britt. 1871, Fl. Trop. Afr. 2: 400. Note: the type is the same as for *Aeonium leucoblepharum* A. Rich. (see upper).

S. chrysanthum Hochst. ex Britt. var. *glabrum* Chiov. 1919, Nuov. Giorn. Bot. Ital., n.s., 26: 154.

Note: based on Schimper, 838 (see *Aeonium leucoblepharum* A. Rich.)

Sphaeritis trachysantha Eckl. & Zeyh. 1837, Enum. Pl. Afr. Austr.: 300.

Isotype (1 sheet): (a) 1915 *Sphaeritis trachysantha* Ek. Caput bonae spei. Ecklon; (b) 1915 *Sphaeritis trachysantha* Ek. Herb. Fischer.

S. typica Eckl. & Zeyh. 1837, loc. cit.: 299. *Crassula sphaeritis* Harv. 1862, Fl. Cap. 2: 299.

Isotype (1 sheet): 1910 *Sphaeritis typica* Ek. Caput bonae spei. Ecklon. Note: also isotype for *Crassula sphaeritis* Harv.

Tetraphyle campestris Eckl. & Zeyh. 1837, loc. cit.: 294.

Isotype (1 sheet): (a) 1873. *Tetraphyle campestris*. Ek. Caput bonae spei. Ecklon; (b) 1873. *Tetraphyle campestris*. Ek. Herb. Fischer; (c) 1873. *Tetraphyle campestris*. Ek. Afric. austr. Ecklon, 1835.

T. furcata Eckl. & Zeyh. 1837, loc. cit.: 293.

Isotypes (3 sheets): 1866. *Tetraphyle furcata*. Ek. Afr. austr. Ecklon, 835, 1866. *Tetraphyle furcata*. Ek. Caput bonae spei, Ecklon and 1866. *Tetraphyle furcata*. Ek. Herb. Fischer.

T. littoralis Eckl. & Zeyh. 1837, loc. cit.: 293.

Isotypes (2 sheets): 1867. *Tetraphyle littoralis*. Ek. Caput bonae spei, Ecklon and 1867. *Tetraphyle littoralis*. Ek. Herb. Fischer.

T. polpodacea Eckl. & Zeyh. 1837, loc. cit.: 293.

Isotypes (2 sheets): 1869. *Tetraphyle polpodacea*. Ek. Caput bonae spei. Ecklon and 1869. *Tetraphyle polpodacea*. Ek. Afric. austr. Ecklon, 835.

T. propinqua Eckl. & Zeyh. 1837, loc. cit.: 293.

Isotypes (2 sheets): 1868. *Tetraphyle propinqua*. Ek. Caput bonae spei. Ecklon and 1868. *Tetraphyle propinqua*. Ek. Afric. austr. Ecklon, 835. Note: also isoelectotype for *Crassula lycopodioides* Lam. var. *obtusifolia* Harv. (see upper).

T. quadrangula Eckl. & Zeyh. 1837, loc. cit.: 293.

Isotypes (2 sheets): 1864. *Tetraphyle quadrangula*. Ek. Afr. austr. Ecklon, 835 and 1864. *Tetraphyle quadrangula*. Ek. Caput bonae spei. Ecklon.

Tillaea ecklonis Walp. 1843, Repert. 2: 251, pro nom. nov.

Note: the type is the same as for *Bulliarda filiformis* Eckl. et Zeyh. (see upper).

T. pharnaceoides Hochst. ex Steud. 1841, Nom. Bot., Ed. 2, 2: 687, nom. nud., Hochst. ex Fisch. & C.A. Mey. 1841, Index Sem. (Peterb.) 8: 56, nom. nud., pro syn.

Note: it is not validly published, see *Crassula pharnaceoides* Fisch. & C.A. Mey.

Umbilicus semiensis J. Gay ex A. Rich. 1848, Tent. Fl. Abyss. 1: 308.

Isotype (det. U. Eggli (1986), 1 sheet): Schimper, No. 1337.

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